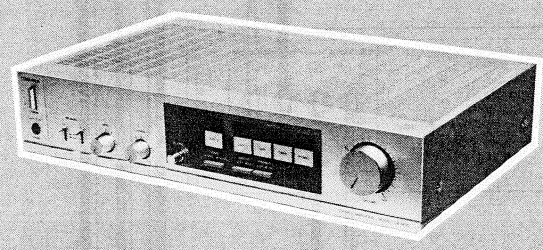
SERVICE DATA
FILE NO. 170-174

TOSHIBA

STEREO AMPLIFIER

SB-M30



SPECIFICATIONS

■ General

Power supply:	220V – 50 Hz (TE) 240V – 50 Hz (TU, AY) 110 – 127/220 – 240V, 50/60 Hz (VF)
Power consumption:	350W (TE, TU, AY) 115W (VF)
Weight:	6.5 kg
Dimensions:	420(W) x 89(H) x 279(D) mm

■ Amplifier

Continuous power output 60 Hz ~ 12.5 kHz both ch. driven:	60W x 2 (4Ω, 0.7% THD IEC) (TE, TU, AY)
1 kHz both ch. driven:	65W x 2 (4Ω, 0.09% THD) (VF)
Tatal harmonic distortion:	0.03% (at ½ rated power 8Ω, 1 kHz)
Frequency response:	10 Hz ~ 100 kHz ($^{+0}_{-3}$ dB) 30 Hz ~ 20 kHz ±0.5 dB (RIAA eq.)
Power band width (IHF):	10 Hz ~ 75 kHz
Load impedance:	4Ω ~ 16Ω
S/N (IHF A Network):	101 dB (TUNER/AUX) 73 dB (PHONO)
Input sensitivity/ impedance:	PHONO 2.5 mV/47 kΩ TUNER 150 mV/22 kΩ AUX/TAPE 150 mV/22 kΩ
Output level:	TAPE REC 150 mV/3.3 kΩ
Tone control:	BASS (at 100 Hz) ±9 dB TREBLE (at 10 kHz) ±9 dB
Phono overload level:	120 mV (RMS/0.05% THD)

Specifications are subject to change without notice.

TE, TU, AY, VF
PRINTED IN JAPAN 22905202 July, 1983 Ⓢ

1. SYSTEM CONTROLS

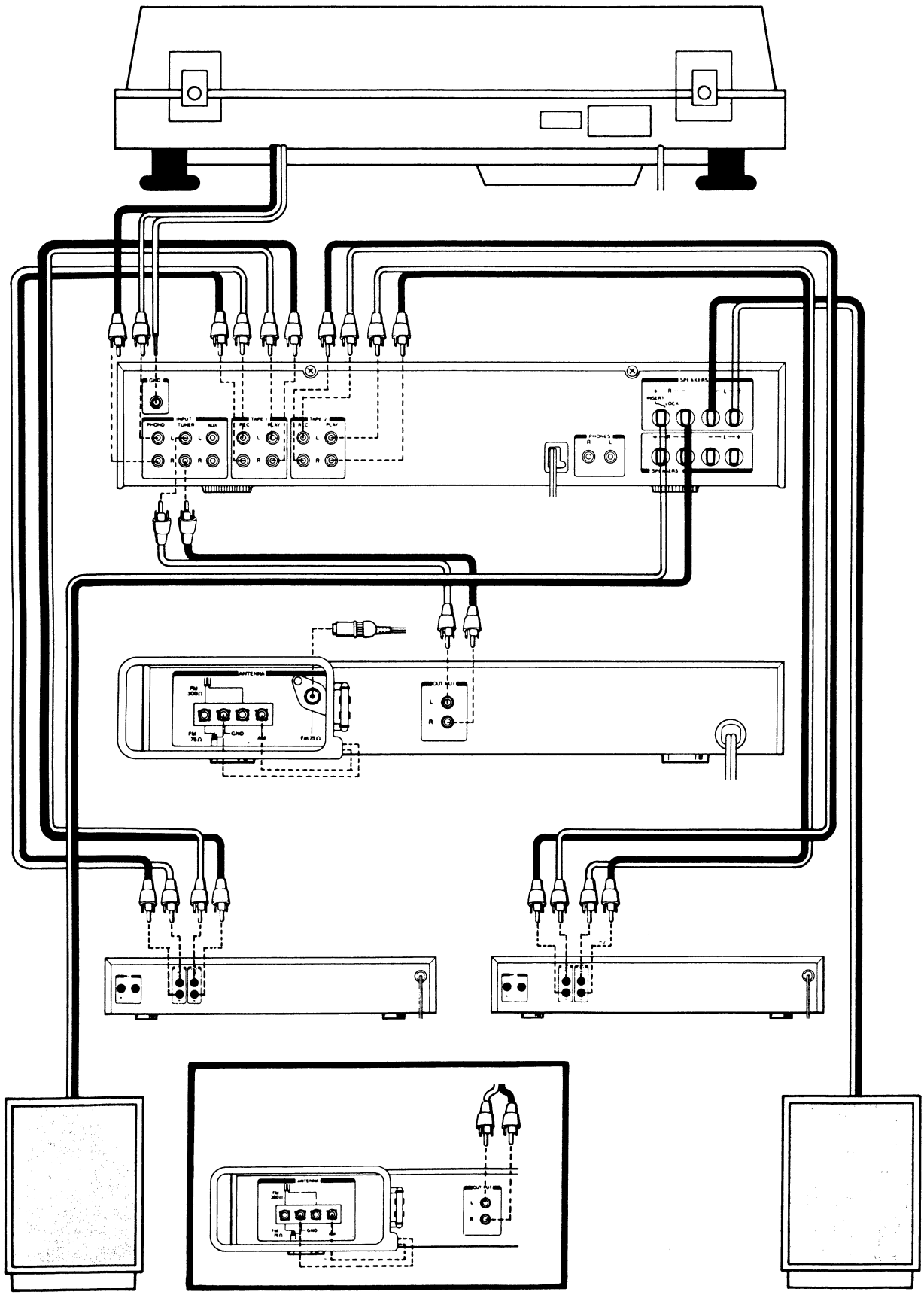


Figure 1

2. OPERATING CONTROLS

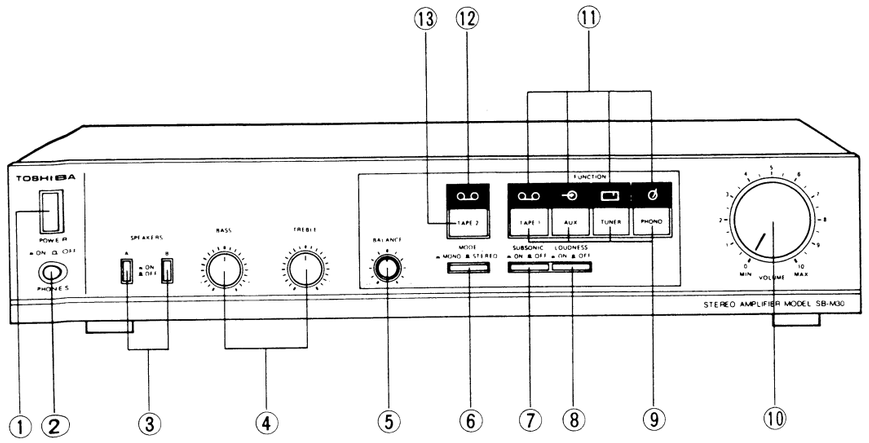


Figure 2

① Power switch
Depress this switch to turn the power on, depress again to turn the power off.

② Phones
Plug into this jack when listening through headphones.

③ Speaker selector
Speakers A and B can be operated independently. Relation of speaker switches to sound output.

Switch B \ Switch A	ON	OFF
ON	Speakers A, B	Speaker B
OFF	Speaker A	No sound

Note: When either speaker A or B is connected to the amplifier, if both switches A and B are depressed, sound from the speaker will be cut off.

④ Bass and treble controls
Turn these knobs clockwise from the centre zero (flat) position to emphasize bass or treble. Turn counter-clockwise to attenuate (decrease) bass or treble.

⑤ Balance control
Turn this knob to adjust volume balance between left and right speakers.

⑥ Mode switch
Set this switch to the mono (depressed) position for monaural reproduction when the input signal is monaral or to convert a stereo input signal to monaural form. Otherwise keep the switch in the stereo (normal) position.
Note: When this switch is in the mono posiiton, the REC out output is also mono.

⑦ Subsonic filter
Depress this switch to reduce noise at very low frequencies caused by warps in a disc.

⑧ Loudness switch
Depress this switch for listening at very low volume levels. The loudness circuit emphasizes the low and high frequency regions for a natural tonal balance at low volume levels. (This switch is effective between the zero and midpoint positions of the volume knob.)

⑨ Funciton selectors
Choose the desired programme source by pressing one of these buttons:
PHONO: For a turntable
TUNER: For a tuner
AUX: For any kind of audio equipment (excluding turntables and microphones)
TAPE 1: For the tape deck connected to the TAPE 1 terminals.

⑩ Volume
Turn this knob to adjust the volume level.

⑪ Function indicators

⑫ TAPE 2 indicator

⑬ TAPE 2 switch
Depress this switch for playback or recording with the tape deck connected to the TAPE 2 terminals.

3. DISASSEMBLY INSTRUCTIONS

TOP COVER REMOVAL
1. Remove six screws Ⓐ (3ϕ x 6mm), Ⓑ (3ϕ x 6mm) and Ⓒ (3ϕ x 6mm), and the top cover can be removed from the unit. (See Figure 3, 4 and 5)

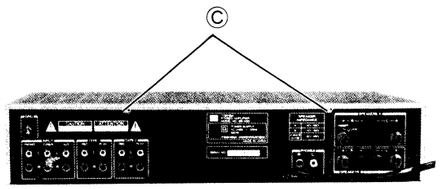


Figure 5

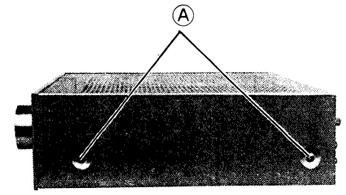


Figure 3

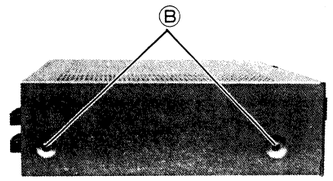


Figure 4

FRONT PANEL REMOVAL
1. Remove top cover. (See Figure 3, 4, and 5)
2. Remove seven screws Ⓓ (3ϕ x 8mm) and Ⓔ (3ϕ x 8mm), and the front panel can be removed from the unit. (See Figure 6 and 7)

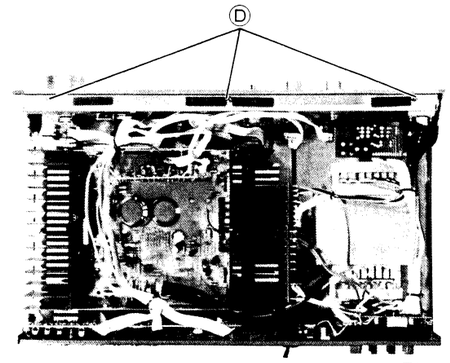


Figure 6

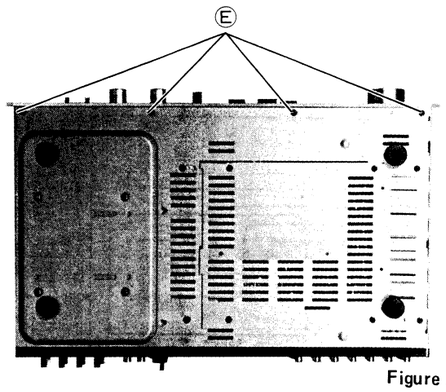


Figure 7

BOTTOM PLATE REMOVAL
1. Remove four screw Ⓕ (3ϕ x 8mm), and the bottom plate can be removed from the unit. (See Figure 8)

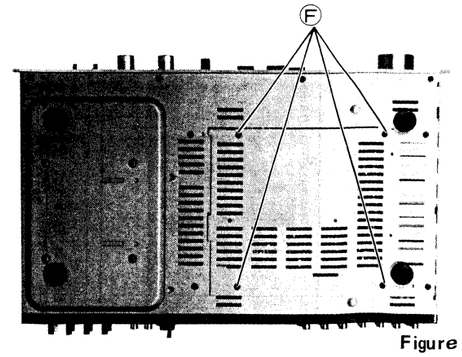
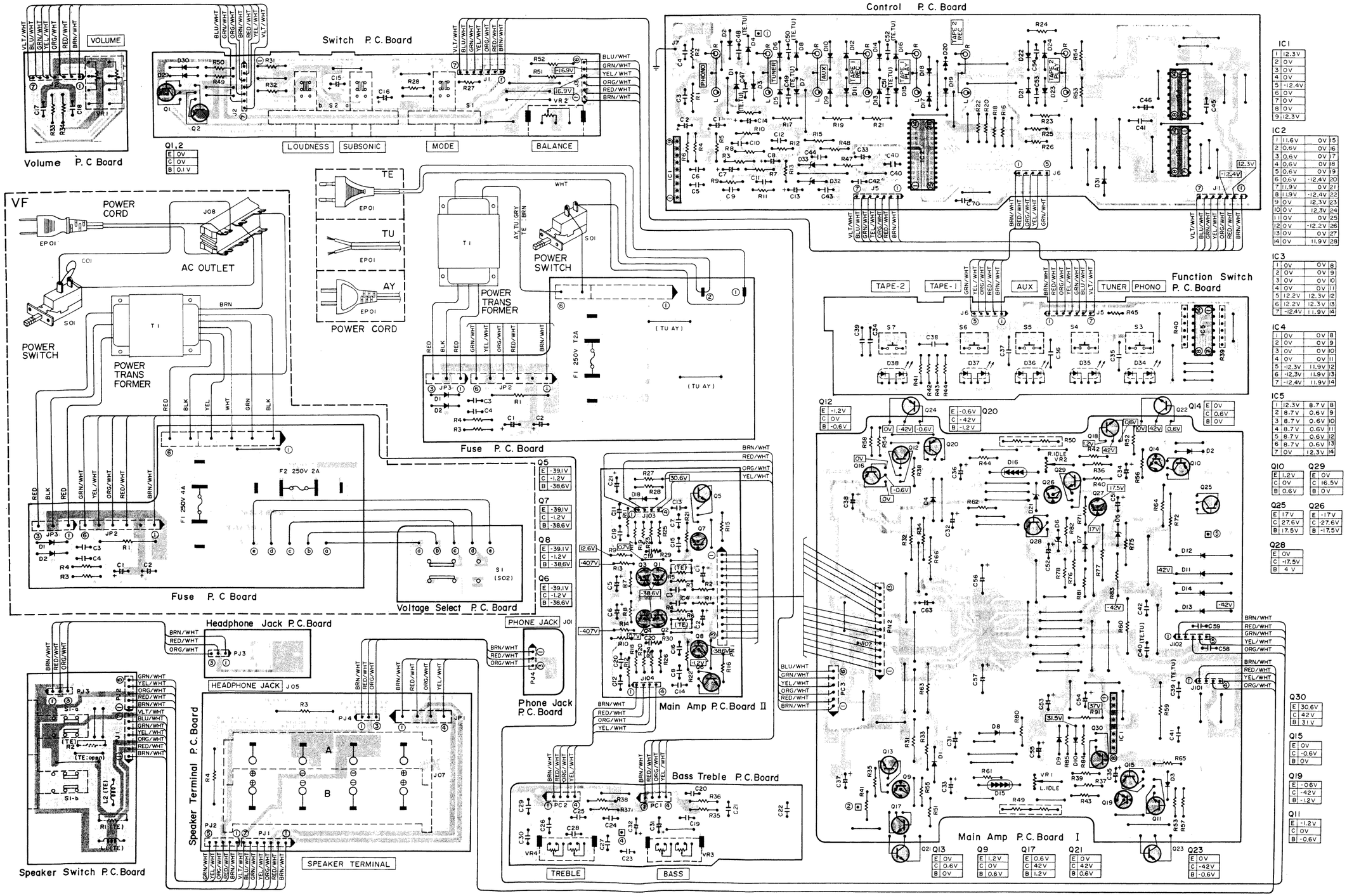
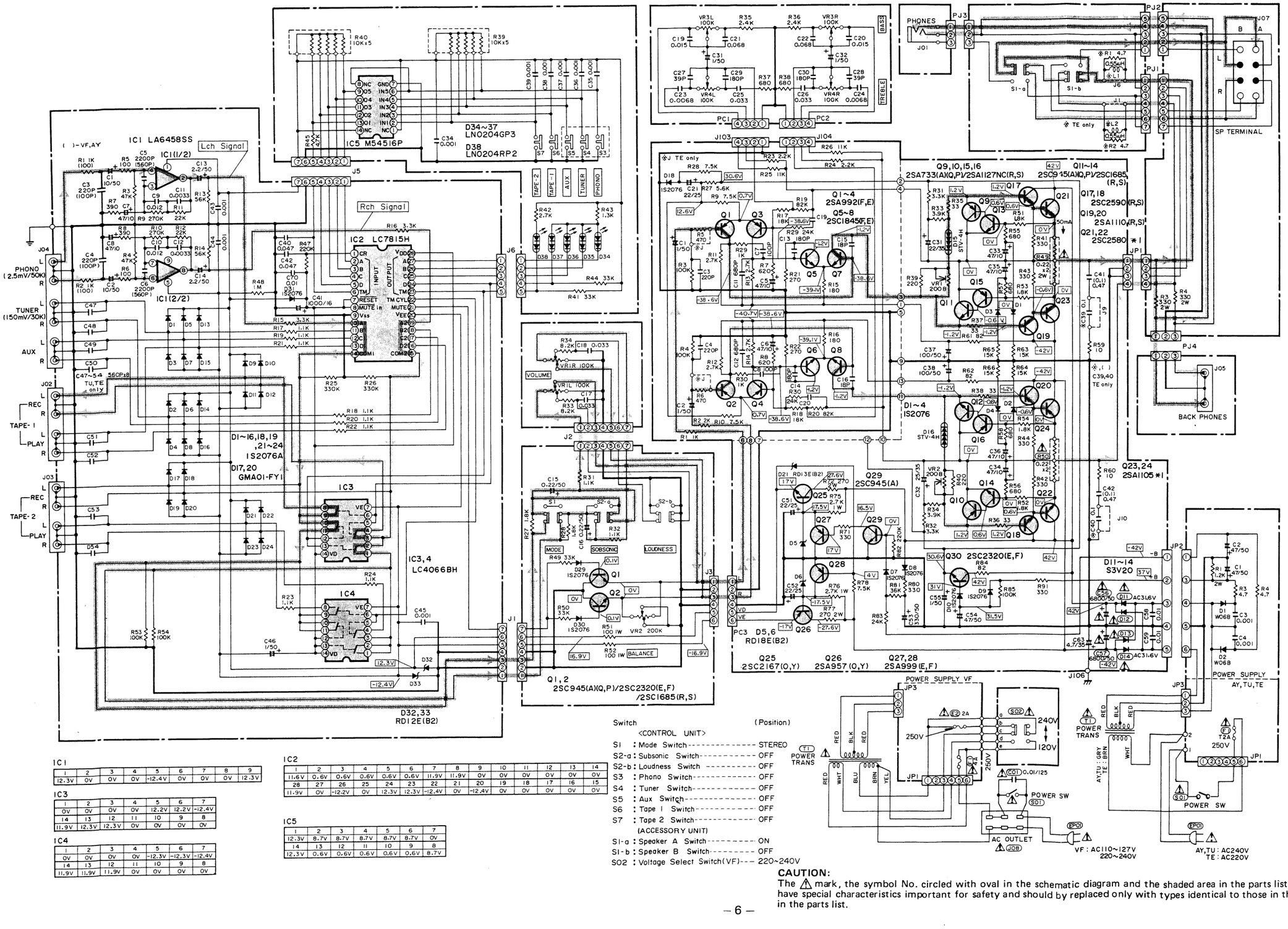


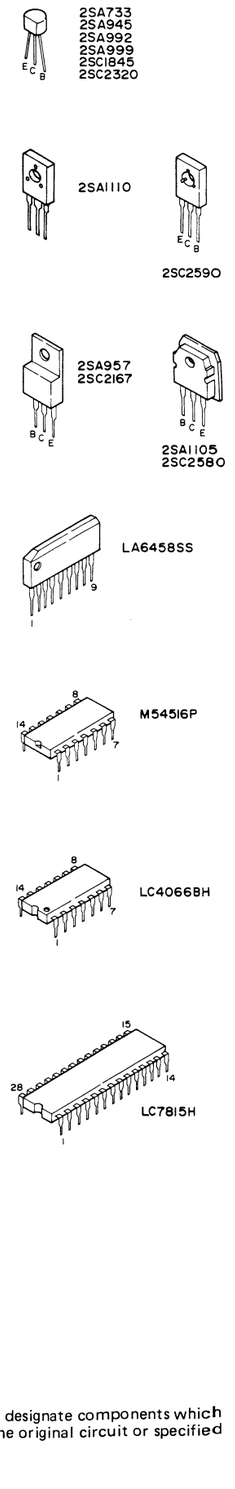
Figure 8

4. ELECTRICAL PARTS LOCATIONS



5. SCHEMATIC DIAGRAM





IC1								
1	2	3	4	5	6	7	8	9
12.3V	0V	0V	0V	-12.4V	0V	0V	0V	12.3V

IC2														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	
11.6V	0.6V	0.6V	0.6V	0.6V	0.6V	11.9V	11.9V	0V	0V	0V	0V	0V	0V	
28	27	26	25	24	23	22	21	20	19	18	17	16	15	
11.9V	0V	-12.2V	0V	12.3V	12.3V	-12.4V	0V	-12.4V	0V	0V	0V	0V	0V	

IC3							
1	2	3	4	5	6	7	
0V	0V	0V	0V	12.2V	12.2V	-12.4V	
14	13	12	11	10	9	8	
11.9V	12.3V	12.3V	0V	0V	0V	0V	

IC4							
1	2	3	4	5	6	7	
0V	0V	0V	0V	-12.3V	-12.3V	-12.4V	
14	13	12	11	10	9	8	
11.9V	11.9V	11.9V	0V	0V	0V	0V	

IC5							
1	2	3	4	5	6	7	
12.3V	8.7V	8.7V	8.7V	8.7V	8.7V	0V	
14	13	12	11	10	9	8	
12.3V	0.6V	0.6V	0.6V	0.6V	0.6V	8.7V	

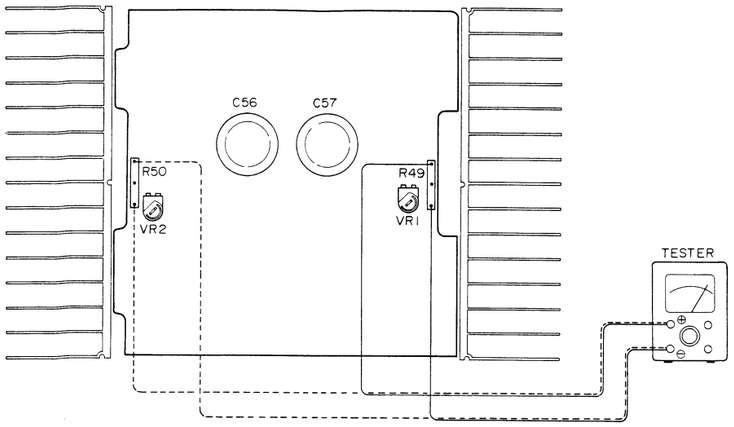
Switch	(Position)
<CONTROL UNIT>	
S1 : Mode Switch	STEREO
S2-a : Subsonic Switch	OFF
S2-b : Loudness Switch	OFF
S3 : Phono Switch	OFF
S4 : Tuner Switch	OFF
S5 : Aux Switch	OFF
S6 : Tape 1 Switch	OFF
S7 : Tape 2 Switch	OFF
(ACCESSORY UNIT)	
S1-a : Speaker A Switch	ON
S1-b : Speaker B Switch	OFF
S02 : Voltage Select Switch(VF)	220~240V

CAUTION:
The ⚠ mark, the symbol No. circled with oval in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should by replaced only with types identical to those in the original circuit or specified in the parts list.

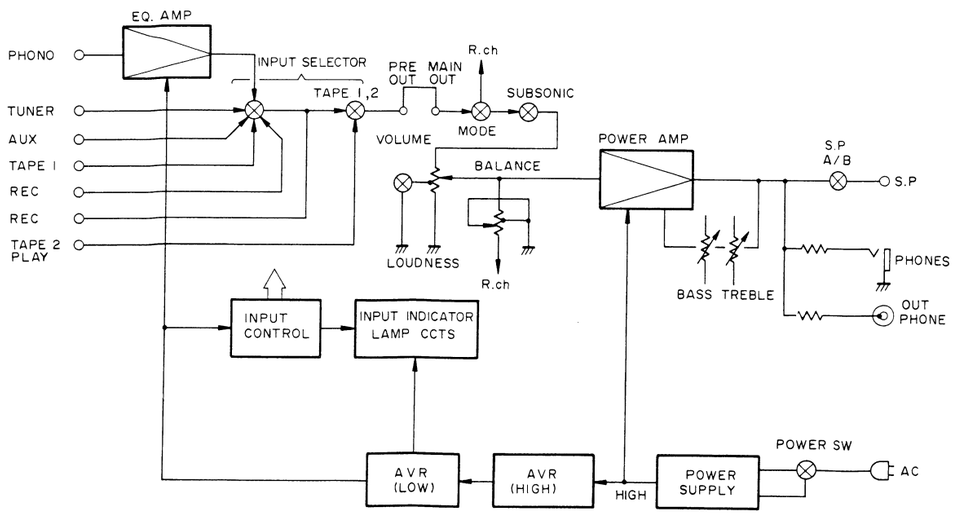
6. IDLE CURRENT ADJUSTMENTS

(Left Channel)
Adjust the resistance value of VR1 so that idle current is 50mA (voltage 22mV) between A and B of TEST POINT R49.

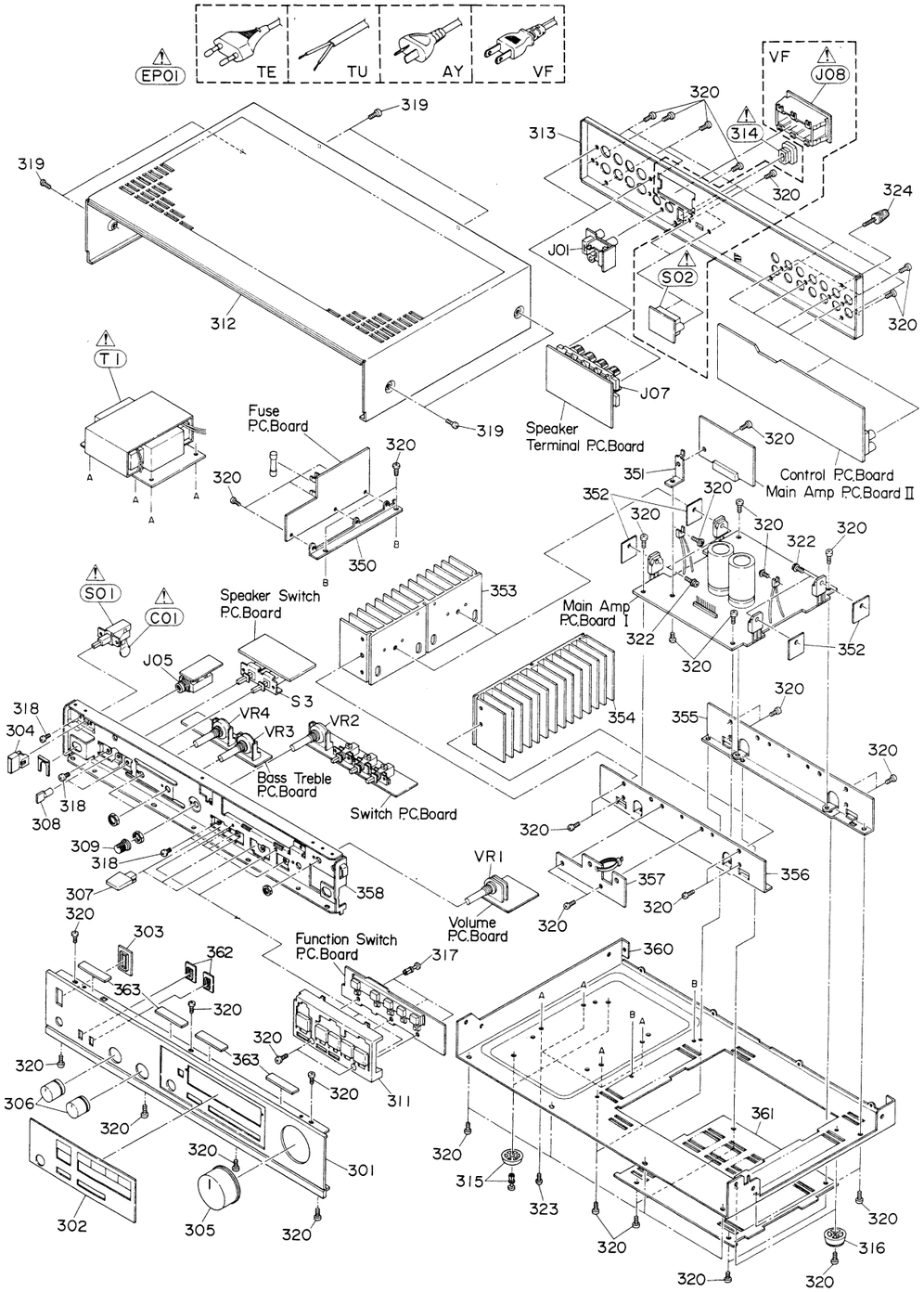
(Right Channel)
Adjust the resistnace value of VR2 so that idle current is 50mA (voltage 22mV) between C and D of TEST POINT R50.



7. BLOCK DIAGRAM



8. EXPLODED VIEW CABINET



NOTE: Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

9. (CABINET) PARTS LIST

CAUTION:
The ⚠ mark, the symbol No. circled with oval in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should by replaced only with types identical to those in the original circuit or specified in the parts list.

Symbol No.	Part No.	Description
301	22825239	Panel Ass'y
302	22838194	Decoration Plate
303	22883067	Escutcheon
304	22824460	Knob Ass'y, Power
305	22826413	Knob, Volume
306	22826414	Knob, Treble/Bass
307	22884321	Knob, Mode/Subsonic/-Loudness
308	22884322	Knob, Speaker
309	22826415	Knob, Balance
311	22826416	Knob Ass'y, Phono/Tuner/-AUX/Tape-1/Tape-2
312	22841391	Top Cover
313	22841354	Jack Plate (TE)
313	22841355	Jack Plate (TU, AY)
313	22841356	Jack Plate (VF)
⚠ 314	25848041	Cord Bush
315	22828090	Foot, Left
316	22828091	Foot, Right
317	22705026	Plastic Rivet, 3ϕ x 6mm
318	22707066	Screw, 3ϕ x 6mm, BID
319	22707490	Screw, 3ϕ x 6mm, BID Tapping
320	22707911	Screw, 3ϕ x 8mm, BID Tapping
322	22707165	Screw, 3ϕ x 10mm, BID Tapping
323	22707269	Screw, 4ϕ x 10mm, BID Tapping
324	22708058	Screw, Ground

Symbol No.	Part No.	Description

10. PARTS LIST

CAUTION:
The ⚠ mark, the symbol No. circled with oval in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should by replaced only with types identical to those in the original circuit or specified in the parts list.

Symbol No.	Part No.	Description
TRANSISTOR, IC'S & DIODES		
MAIN AMP UNIT		
Q1, 2	22117256	Transistor, 2SA992-F/E
3, 4		
Q5, 6	22117262	Transistor, 2SC1845-F/E
7, 8		
Q9, 10	22114206	Transistor, 2SA733A-Q/P
15, 16		
Q11, 12	22114768	Transistor, 2SC945A-Q/P
13, 14		
29		
Q17, 18	22117267	Transistor, 2SC2590-R/S
Q19, 20	22117259	Transistor, 2SA1110-R/S
Q21, 22	22117322	Transistor, 2SC2580 *1
Q23, 24	22117323	Transistor, 2SA1105 *1
Q25	22117263	Transistor, 2SC2167-O/Y
Q26	22117255	Transistor, 2SA957-O/Y
Q27, 28	22117246	Transistor, 2SA999-E/F
Q30	22117264	Transistor, 2SC2320-E/F
CONTROL UNIT		
Q1, 2	22114768	Transistor, 2SC945-Q/P
IC1	22117271	IC, LA6458SS
IC2	22117278	IC, LC7815H
IC3, 4	22117277	IC, LC4066BH
IC5	22117279	IC, M54516P
MAIN AMP UNIT		
D1, 2	22115882	Diode, 1S2076A
3, 4		
D5, 6	22115539	Diode, RD18E-B2
D7, 8	A7246703	Diode, 1S1555V
9, 10		
18		
⚠ D11, 12	22115401	Diode, S3V20
13, 14		
D15, 16	22115424	Diode, STV-4H
D21	22115947	Diode, RD13E-B2

Symbol No.	Part No.	Description
CONTROL UNIT		
D1 ∿ 16	22115882	Diode, 1S2076A
18, 19,		
21, 22,		
23, 24		
D17, 20	22115887	Diode, GMA01-FY1
D29, 30,	22115451	Diode, 1S2076
31		
D32, 33	22115755	Diode, RD12E-B2
D34, 35,	22115897	Diode, LED, LN0204GP3
36, 37		
D38	22115898	Diode, LED, LN0204RP2
FUSE UNIT		
D1, 2	22115894	Diode, W06B
ELECTRICAL PARTS		
⚠ T1	22224270	Transformer, Power (TE)
⚠ T1	22224271	Transformer, Power (TU)
⚠ T1	22224272	Transformer, Power (AY)
⚠ T1	22224273	Transformer, Power (VF)
⚠ EP01	22176286	Power Cord (TE)
⚠ EP01	22176628	Power Cord (TU)
⚠ EP01	22176588	Power Cord (AY)
⚠ EP01	22176125	Power Cord (VF)
EP02	22165036	Fuse Holder (TE, TU, AY)
EP02	22165093	Fuse Holder (VF)
⚠ J08	22169040	AC Outlet 3P (VF)
⚠ S01	22196360	Push Switch, Power
CONTROL UNIT		
S1	22196332	Push Switch, Mode
S2	22196335	Push Switch, Subsonic/-Loudness
S3, 4, 5,	22196327	Key Switch, Phono/Tuner/-AUX/Tape-1/Tape-2
6, 7		

Symbol No.	Part No.	Description
J02, 03	22198053	Jack, 4P, Tape-1/Tape-2
J04	22198055	Jack, 6P, Input
	FUSE UNIT	
L1, 2	22210188	Coil, 0.55μH (TE)
⚠ F1	22144477	Fuse, T2A, 250V(TE, TU, AY)
⚠ F1	22144478	Fuse, 4A, 250V (VF)
⚠ F2	22144479	Fuse, 2A, 250V (VF)
	ACCESSORY UNITS	
S1	22196333	Push Switch, Speaker
⚠ S02	22196336	Slide Switch, Voltage (VF)
J01	22198050	Jack, 2P, Phones
J05	22198060	Jack, 6φ, Headphones
J07	22162522	Terminal, 8P, Speaker

CAPACITORS

J = ±5%, K = ±10%, N = ±30%, P = −0 + 100%,
Z = −20 + 80%
ABBREVIATIONS: CD = Ceramic Disk, EL = Electrolytic
BL = Barrier Layer, MY = Mylar

⚠ C01	22340172	CD, 0.01mfd, 125V, Z (VF)
	MAIN AMP UNIT	
C1, 2	22488109	EL, 1mfd, 50V
C3, 4	22362221	CD, 220pF, 50V, J
C5, 6	22483470	EL, 47mfd, 10V
C7, 8	22362101	CD, 100pF, 50V, J
C11, 12	22349681	CD, 680pF, 50V, J
C13, 14	22362181	CD, 180pF, 50V, J
C15, 16	22361180	CD, 18pF, 50V, J
C19, 20	22361509	CD, 5pF, 50V, J
C21	92486220	EL, 22mfd, 25V
C31, 32	22486220	EL, 22mfd, 35V
C33, 34	22483470	EL, 47mfd, 10V
C35, 36	22483470	EL, 47mfd, 10V
C37, 38	22488101	EL, 100mfd, 50V
C39, 40	22371104	MY, 0.1mfd, 50V, J (TE)
C41, 42	22371104	MY, 0.1mfd, 50V, J (TE)
C41, 42	22371473	MY, 0.047mfd, 50V, J (TU, AY, VF)
C51, 52	22486220	EL, 22mfd, 25V
C53	22448331	EL, 330mfd, 50V
C54	22488470	EL, 47mfd, 50V
C55	22488109	EL, 1mfd, 50V
⚠ C56, 57	22440645	EL, 6800mfd, 50V
⚠ C58, 59	22340030	CD, 0.01mfd, 500V, P
C63	22488479	EL, 4.7mfd, 35V
	CONTROL UNIT	
C1, 2	22488100	EL, 10mfd, 50V
C3, 4	22362221	CD, 220pF, 50V, J (TE, TU)
C3, 4	22362101	CD, 100pF, 50V, J (AY, VF)
C5, 6	22349222	CD, 2200pF, 50V, K (TE, TU)
C5, 6	22349561	CD, 560pF, 50V, K (AY, VF)
C7, 8	22485470	EL, 47mfd, 10V
C9, 10	22371123	MY, 0.012mfd, 50V, J
C11, 12	22371332	MY, 3300pF, 50V, J
C13, 14	22488229	EL, 2.2mfd, 50V
C15, 16	22488108	EL, 0.1mfd, 50V
C17, 18	22371333	MY, 0.033mfd, 50V, J
C19, 20	22371153	MY, 0.015mfd, 50V, J
C21, 22	22371683	MY, 0.068mfd, 50V, J
C23, 24	22371682	MY, 6800pF, 50V, J
C25, 26	22371333	MY, 0.033mfd, 50V, J
C27, 28	22362390	CD, 39pF, 50V, J
C29, 30	22362181	CD, 180pF, 50V, J
C31, 32	22488109	EL, 1mfd, 50V
C34, 35	22360721	BL, 1000pF, 25V, N
C36, 37	22360721	BL, 1000pF, 25V, N
C38, 39	22360721	BL, 1000pF, 25V, N
C41	22486102	EL, 1000mfd, 16V
C40, 42	22371473	MY, 0.047mfd, 50V, J
C43, 44	22343103	CD, 0.01mfd, 50V, Z
C45	22343103	CD, 0.01mfd, 50V, Z
C47, 48	22349561	CD, 560pF, 50V, K (TE, TU)
C49, 50	22349561	CD, 560pF, 50V, K (TE, TU)
C51, 52	22349561	CD, 560pF, 50V, K (TE, TU)
C53, 54	22349561	CD, 560pF, 50V, K (TE, TU)
C70	22349103	CD, 0.01mfd, 50V, J
	FUSE UNIT	
C1, 2	22488470	EL, 47mfd, 50V
C3, 4	22349103	CD, 0.01mfd, 50V, Z

Symbol No.	Part No.	Description
RESISTORS All resistors are carbon film, 1/4W, ±5% unless otherwise noted. 1K ohm = 1000 ohm, 1M ohm = 1000000 ohm		
MAIN AMP UNIT		
VR1, 2	22658730	200 ohm, Semi-fixed Variable
R1, 2	22545102	1K ohm
R3, 4	22545104	100K ohm
R5, 6	22545471	470 ohm (TE)
R7, 8	22545681	620 ohm
R9, 10	22545822	7.5K ohm
R11, 12	22545272	2.7K ohm
R13, 14	22545272	2.7K ohm
R15, 16	22545181	180 ohm,
R17, 18	22545183	18K ohm
R19, 20	22545823	82K ohm
R21, 22	22545271	270 ohm,
R23, 24	22545222	2.2K ohm
R25, 26	22545123	11K ohm
R27	22545562	5.6K ohm,
R28	22545822	7.5K ohm,
R29, 30	22545223	24K ohm,
R31, 32	22570280	3.3K ohm, 1W, Metal Oxide Film
R33, 34	22570281	3.9K ohm, 1W, Metal Oxide Film
R35, 36	22545330	33 ohm,
R37, 38	22545330	33 ohm,
R39, 40	22545221	220 ohm,
R41, 42	22545331	330 ohm,
R43, 44	22545331	330 ohm,
⚠ **R49, 50**	**22570597**	**0.22 ohm x 2, 5W, Wire Wound**
R51, 52	22545182	1.8K ohm,
R53, 54	22545182	1.8K ohm,
R55, 56	22545681	680 ohm,
R57, 58	22545681	680 ohm,
R59, 60	22570295	10 ohm, 2W, Metal Oxide Film
R61, 62	22545820	82 ohm,
R63, 64	22545153	15K ohm,
R65, 66	22545153	15K ohm,
R71	22545331	330 ohm,
R72	22570312	270 ohm, 2W, Metal Oxide Film
R75, 76	22570279	2.7K ohm, 1W, Metal Oxide Film
R77	22570312	270 ohm, 2W, Metal Oxide Film
R78	22545822	7.5K ohm,
R80	22545331	330 ohm,
R81	22545363	36K ohm,
R82	22545224	220K ohm,
R83	22545223	24K ohm,
R84	22545820	82 ohm,
R85	22545104	100K ohm,
R91	22545331	330 ohm,
CONTROL UNIT		
VR1	22651590	100K ohm x 2, Variable, Volume
VR2	22657296	200K ohm, Variable, Balance
VR3	22657297	100K ohm, Variable, Treble
VR4	22657297	100K ohm, Variable, Bass
R1, 2	22545102	1K ohm (TE, TU)
R1, 2	22545101	100 ohm (AY, VF)
R3, 4	22545473	47K ohm,
R5, 6	22545101	100 ohm,
R7, 8	22545391	390 ohm,
R9, 10	22545271	270 ohm
R11, 12	22545223	22K ohm
R13, 14	22545563	56K ohm
R15, 16	22545332	3.3K ohm,
R17, 18	22545122	1.1K ohm,
R19, 20	22545122	1.1K ohm,
R21, 22	22545122	1.1K ohm,
R23, 24	22545122	1.1K ohm,
R25, 26	22545334	330K ohm
R27, 28	22545182	1.8K ohm
R31, 32	22545122	1.1K ohm,
R33, 34	22545822	8.2K ohm,
R35. 36	22545242	2.4K ohm,
R37, 38	22545681	680 ohm,
R39, 40	22130721	Composite Part, 10K ohm x 5
R41	22545333	33K ohm,
R42	22545272	2.7K ohm,
R43	22545122	1.3K ohm,
R44	22545333	33K ohm,
R45	22545472	4.7K ohm
R47	22545224	220K ohm,
R48	22545105	1M ohm,
R49, 50	22545333	33K ohm,
R51, 52	22570250	100 ohm, 1W, Metal Oxide Film
R53, 54	22545104	100K ohm,

Symbol No.	Part No.	Description
	FUSE UNIT	
R1	22570153	1.2K ohm, 2W, Metal Oxide Film
R3, 4	22555479	4.7 ohm,
	ACCESSORY UNITS	
R1, 2	22555479	4.7 ohm (TE)
R3, 4	22570313	330 ohm, 2W, Metal Oxide Film
	ACCESSORIES	
AC01	22903773	Owner's Manual (TE)
AC01	22903774	Owner's Manual (TU, AY)
AC01	22903775	Owner's Manual (VF)
AC02	22164300	Adapter, AC Plug (VF)

Symbol No.	Part No.	Description